



Minco Pipe, Inc.

3400 W. Marshall Avenue Suite 428 Longview, TX 75604 Phone: (903) 759-2711 Fax: (903) 759-8950

GENERAL OPERATING PROCEDURES FOR BURNING BARS & LANCE PIPE

“Personal safety depends on sincere safety-mindedness and good judgment on the part of each individual, not on occasional intervals, but continuously as an integral part of daily activity.”

The best insurance against accidents and injuries may be summed up in five short sentences.

- **Know your job and the pertinent safety rules**
- **Be aware of hazards in the work area**
- **Keep your mind on the job.**
- **Use Common Sense.**
- **If you can't do it safely, don't do it.**

Improper use of Burning Bars & Lance Pipe can result in personal injury or even death. Accordingly it is essential that these burn cutting tools be used in accordance with these instructions in conjunction with site specific safety operating procedures. Therefore, study these instructions carefully and ensure that you understand all instructions completely prior to the use of the exothermic cutting tools.

Burning Bars & Lance Pipe (exothermic cutting) generates temperature in ranges exceeding 3,000 to 12,000 degrees Fahrenheit when in use. When properly used it is a highly effective tool.

BURNING BARS versus LANCE PIPE

- ⇒ Lance pipe is a hollow butt-weld pipe or electric welded tube which is used in various inside diameter sizes from 1/8 to 2 inch (plus).
- ⇒ A burning bar is a lance pipe stuffed with wires that act as the catalyst to sustain burning.
- ⇒ Burning Bars & Lance Pipe must be oil & grease free to prevent explosions that may occur from oxygen mixing with the oil & grease. All equipment and hoses used for burning must also be “cleaned for oxygen use”.
- ⇒ Burning Bars & Lance Pipe come with various ends depending on the holder utilized and whether or not the pipe must fastened together to obtain optimum length, etc. The different names associated with end design are plain end, threaded (& coupled) one or both ends, slip on quick couple, pressed on quick couple and/or expanded end quick couple.
- ⇒ Burning Bars & Lance Pipe traditionally are available in 10’6” and 21’ lengths although any length is possible.

GENERAL PRECAUTIONS

- ⇒ Using oxygen at this flow rate requires adequate evaporators to handle the volume. Oxygen flow at this rate produces a refrigeration effect. It is essential that adequate evaporation is utilized. Check oxygen system on a regular basis and ensure that there is no freezing in the system after the evaporator. If freezing occurs, shutdown the system immediately, determine the problem and solve the problem before restarting the system.
- ⇒ The Burning Bars & Lance Pipe system should be used only by workers fully trained and qualified in every aspect of burning.
- ⇒ It is recommended that a minimum of two (2) workers be involved in the performance of the work.
- ⇒ All workers in the area of the burning must wear appropriate personal protective equipment (PPE).
- ⇒ Ensure that all fire protection procedures are in place. It is recommended that a fire watch procedure is used.

WORK SITE PREPARATION

- ⇒ Prior to using Burning Bars & Lance Pipe thoroughly inspect the work site for hazards & potential hazards (i.e., oil & grease, physical restrictions, flammable materials, confined spaces, utilities, tripping hazards, etc.). Identify and remove these hazards where possible. Plan work to avoid hazards which cannot be removed.
- ⇒ Obtain & implement the required burning permit(s).
- ⇒ Obtain & implement the required fire procedure(s).
- ⇒ Identify at least one (1) evacuation route.
- ⇒ Be sure there is proper ventilation for smoke & gases which will be created during the burning process. A respirator (and/or supplied air hood if required) should be worn by all workers involved in the burning or exposed to smoke & gases created by burning. Scrubbing of smoke might be required.
- ⇒ Review MSDS sheets of the Burning Bars & Lance Pipe. ***Check the MSDS of material being burned for respiratory precautions prior to the start of work.***

PERSONAL PROTECTIVE EQUIPMENT (PPE)

THE EQUIPMENT REQUIRED FOR PERSONAL PROTECTION CAN VARY BASED ON WORK SITE CONDITIONS AND THE MATERIAL BEING BURNED. EACH SITE SHOULD BE THOROUGHLY EVALUATED FOR IDENTIFICATION OF ALL APPROPRIATE PROTECTIVE EQUIPMENT.

- ⇒ At a minimum all workers involved in burning should wear aluminized or burning spats, aluminized or burning apron and/or pants, aluminized or burning jacket, cuffed heat mitts, head & face protection, safety glasses, and either a respirator and/or supplied air hood.
- ⇒ A protective shield and/or scaffold shield may be required to guard against splash back of materials when burning a surface which prohibits the slag from flowing easily away from the operator.
- ⇒ It is highly recommended that a full aluminized hood is utilized during burning. Aluminized hoods are now available with supplied air if required.

GENERAL SAFETY REGARDING THE USE OF OXYGEN

- ⇒ Be aware of possible clearance problems and site restrictions.
- ⇒ Ensure that all oxygen sources being utilized are individually regulated and set at the desired operating pressure, which is recommended not to exceed 250 psi.
- ⇒ Use high pressure oxygen hose with a minimum pressure rating of 300 psi. Do not use standard and/or general purpose oxygen hose lines as leakage occurs over 100 psi.
- ⇒ All equipment (hoses, handles, valves & fittings, etc.) used in the burning process must be ***“approved and cleaned”*** for oxygen service.
- ⇒ Oxygen is extremely reactive with combustibles, especially hydrocarbons like oil/grease/paint. Keep your clothing and all burning equipment free of these hydrocarbon materials.
- ⇒ All equipment must be approved for oxygen service and degreased. Degreasing must be carried out by qualified personnel.
- ⇒ Keep bare skin away from oxygen.
- ⇒ There is to be no smoking near oxygen or in work area where burning is occurring.
- ⇒ To prevent damage and and/or a sudden release of oxygen, do no kink hoses for any reason.
- ⇒ Wear gloves when operating the burning bar system. Be aware of brass slivers from threads.
- ⇒ Prior to beginning work ensure that only authorized personnel are in work area and safety cordon off the work area as required.
- ⇒ ***At the conclusion of lancing or burning always turn off oxygen at source, disconnect oxygen hoses and equipment and put away in approved storage area.***

PREWORK INSPECTION

- ⇒ Check area to ensure that you have free access and that there are no tripping hazards.
- ⇒ Check all personal protective equipment to ensure it is in good order.
- ⇒ As much as possible ensure that hoses are under/over stairways and walkways providing adequate clearance.
- ⇒ Ensure that burning bar ends are free from dirt and/or other obstructions.
- ⇒ Check all valves to ensure that they are free from dirt, oil & grease and in good working order.
- ⇒ Check all valves to ensure that they are free from dirt, oil & grease and in good working order.
- ⇒ Inspect the burning bar handle. Ensure that valve on burning bar/lance pipe holder is in closed position. Do not use the burning bar handle if assembly appears to be damaged or worn.
- ⇒ Ensure that all hose, Burning Bars & Lance Pipe Holders and Burning Bars & Lance Pipe are connected securely with no leaks by trained operating personnel.
- ⇒ Do not modify outlet pipes in any way. All changes to outlet, supply valves, etc. must be made by authorized and oxygen trained pipefitters.
- ⇒ Refer to the Manufacturers’ Burning Bar & Lance Pipe Holder operating and maintenance procedure(s) for the handle being utilized.
- ⇒ It is recommended that a safety spike valve (commonly referred to as an automatic shutoff or deadman valve) be installed at oxygen supply outlet and in good working condition.
- ⇒ All hoses, fittings and handle connections must be tested for leaks prior to use. This is completed by pressurizing the oxygen system with the holder’s control valve in the fully closed position and with Leaktec, check each connection.

PRESTART / OPERATING

- ⇒ Ensure that control valve on Burning Bar/Lance Pipe Holder is in a closed position.
- ⇒ Open high pressure oxygen supply.
- ⇒ Check pressure gauge to ensure proper pressure setting.
- ⇒ Inspect Burning Bar/Lance Pipe attachment into Holder. Open up control valve on Holder and with a bare hand ensure that there are no leaks at point that Burning Bar/Lance Pipe enters Handle.
- ⇒ Close control valve. System is now ready to use.
- ⇒ To ignite Burning Bars & Lance Pipe it is recommended that a 2 man crew is utilized.
 - ◆ Using the control valve on the Burning Bar/Lance Pipe open the oxygen control valve partially.
 - ◆ Ensure the Burning Bar/Lance Pipe is not pointed towards anyone.
 - ◆ Using an oxygen / acetylene torch, equivalent cutting tool, and/or “hot-box”, ignites the end of the burning bar by gradually applying oxygen until bar ignites.
 - ◆ After ignition, increase the oxygen pressure to the desired operating pressure (100 psi to 250 psi).
 - ◆ It is recommended that the pressure does not exceed 250 psi on the regulator.
- ⇒ Burning Bars & Lance Pipe will burn slowly taking about 4 ½ minutes to be consumed. Do not burn the burning bar and/or lance pipe shorter than 12 inches from the handle. This distance may vary depending on the holder being used and in the case of a burning bar the position of the crimping on the bar.
- ⇒ When turning off the burning bar ensure that the control valve on holder is in the fully closed position.
- ⇒ When a new bar is required the following steps must be taken:
 - ◆ The operator must shut off the burning bar handle control valve to the fully closed position.
 - ◆ Using heat resistant gloves, the operator is to disconnect the used bar (as per manufacturers handle/holder instructions).
 - ◆ Inspect the new bar and ensure there are no cracks, that it has not been contaminated and that there are no plugged ends. If damage exists, discard it.
 - ◆ Slip the new bar into the holder and secure.
 - ◆ Light the new burning bar as per instructions included herein.

SAFE USE OF BURNING BARS & LANCE PIPE

- ⇒ Never point Burning Bars & Lance Pipe & Lance Pipe and/or lance pipe at anything you do not intend to burn.
- ⇒ Keep the oxygen hose away from molten metal, potential splashback areas and existing hazards.
- ⇒ Direct the bar so that all workers (including the helper) and equipment are behind the burning bar.
- ⇒ Ensure that oxygen flow and material splashback is away from workers. If this cannot be done construct shields for protection to workers.
- ⇒ Should the burning bar be extinguished for any reason, shut off oxygen immediately, remove burning bar from work area being burned to allow cooling. Inspect burning bar and determine why bar extinguished.
- ⇒ It is recommended that burning bar be replaced rather than reused.

The Safety Plan included herein, is generic and should be treated as a guide only in the preparation of a site specific plan. Site conditions such as confined spaces, fume collection, site specific hazards, oxygen supply systems, etc. need to be addressed and incorporated into the Job Specific Safety Procedures.